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Metepistemological Peratology

Perspectives on the Limit in Art, Science and beyond

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Synopsis

This paper is part of the author's doctoral studies, focused on the Architectural Ecotonics. Architecture is the art and science of the built limits, but the limit, in this case, is a complex system that we study from different perspectives, considering a comparative and metepistemic approach that we define, calling not only architecture, but also literature, mathematics and music into the argumentation area. The boundary spaces studied by the Ecotonics are the key to an environmental integration of architecture and a new approach in theoretical and applied ecological policies. The bath(m)ological perspective on the limit is both a filter and a solution we propose for the topological interpretation of the limit in architecture as well as for the new, broadened epistemological approach. Fuzziness, interference and harmony have a synergetic influence on the main concepts. Architecture has particular characteristics, offering the opportunity to challenge the other discipline's limits and, ultimately, re-definitions.

Key words: Limit, Fuzziness, Bath(m)ology, Ecotone, Metepistemology.

1. Architecture as Peratopology

Architecture developed in times when disciplines spread on wider territories and they tended to preserve that character some time after the classical "*polymathes*" or the "*homo universalis*", until the deep specializations were imposed. Even more, the limits between disciplines were more flexible and more often ignored. An architect was, in most of the cases, an example of universal man, with his culture covering vast areas of knowledge, a philosopher closer to the matter.

Architecture has another privileged position in this context: it is the art and science of the limits in space, a "*peratopology*", as defined in the author's previous studies, from the Greek terms "*peras*", limit, "*topos*", place and "*logos*", science. The ancient Greek verb "teucho" meant, indeed, to manufacture, to build, but the *"teuchos*", from the same root, meant tool, weapon, furniture, as well as vase, vessel, pot, barrel and, generally, any object with a cavity like a pot, a solid limit closing a void, like the carpenter's work was covering, closing, limiting the interior space of a building. The chief carpenter, the "*architekton*", was the one having the knowledge to imagine and build this kind of material, well-crafted, solid limits.

2. The thin limit

During the evolution from the shelter to the architectural work, in the attempt to protect themselves against some of the natural forces and other attacks from beasts or humans, men started building structures able to limit these forces and dangers, aiming to de-limit their own micro-environment, to de-fine, therefore, those specific "*peratopological*" structures in the environment that could provide the suitable living conditions for them. These structures, superior harmonics of the natural environment, were build as an inverted and introverted biotope, on the model of an inverted chord in music, where the root is no longer in the bass position. In many cases, however, these structures were built as thin density concentrations, a sharp edge between interior and exterior spaces conceived for isolation, but this kind of built limit also translated into mesostenotic configurations, strangulated in the in-between environment, narrow spaces of discontinuity in ecosystems' flows of matter, energy and information.

We could not find, in the theory of architecture, an expression of this model of the thin limit as we found in literature, with Ovidius' *Epistulae Ex Ponto*, his letters from the exile. The situation was also paradigmatic, the poet being away from Rome, in a hostile territory and a hostile climate, but his poem offers an exemplary expression of this architectural paradigm, in a pair of substantives sustained by a pair of attributes: "*discrimen murus clausaque porta*". This offers the unique image of the *discrimenion*, the separative element, an aporotic (non-porous) limit that can serve as an archetype for the work of architecture conceived as a masterwork of isolation. This approach, at different scales, inflicted deep wounds on the environment's constitution, generating pathological discontinuities and fractures, not only benign tensions and pushing both the systems' and development's limits beyond the nature's resilience capacity.

3. Peratological bath(m)ology

There is no direct mapping of the limit's depth and complexity on the time axis, no continuous evolution from one extreme to the other, the models overlap in time and space and we can find remarkable examples of complex limits in the ancient architecture as well as in contemporary approaches the same way we can identify thin shells examples in all historical periods, although we might notice that modern materials and technologies provided the means to build thin and, at the same time, efficient enclosures.

This is the time when the limit in architecture has to gain, together with its porosity, its own depth and we studied this in a bath(m)ological perspective, identifying those limits that have their own special and spacial identity. A zero-degree limit is the fracture, the fault, the rupture; a first degree limit is the one that operates a simple separation, a uni-dimensional limit between two-dimensional entities or a two-dimensional separation between three-dimensional entities and so on; a second-degree limit is a limit that can contemplate its own limits, has its own substance and territoriality.

4. Architectural Ecotonics

Following the study of limit's complexity, degrees and depth, on the basis of a metepistemological and comparative approach, the author defined Ecotonics, the study of transition spaces, within the peratopological studies, expanding and redefining the ecological term of ecotone. As previously stated, "Architectural Ecotonics focuses on the shift from the direct to the inverted state of anthropic spaces' harmony, setting the transitions places, the mesotopies, at the base of these structures, instead of the main functional units, conceived in dichotomic constitution." Ecotonics were certainly defined on general topological basis, although a strict architectural perspective involves certain metrics and measurability.

Considering an Architectural Fuzzy Sets Theory that can provide complex transition spaces as core principle of the architectural limits' constitution, in direct connection to the harmonic structures the author studied, illustrated by the anacrustic and metacrustic components balanced around the crusis density manifestation in a metepistemic and comparative topological structure, the fuzzy limits of the interior spaces can change the nature and the density of the shell in the work of architecture.

The peratological bath(m)ology applied to the study of complex natural and anthropic (eco)systems focuses not only on the complexity degree of those main and boundary systems, but also on a referential degree that transforms the simple limit in a second degree limit as a space in itself, offering a chance to the restoration of the continuity, throughout the boundaries, of the potential homotopic ecosystems' structure.

5. Metepistemic perspectives

We can distinguish, within the epistemic continuum, the same symptoms we identified, with the mesostenotic artificial structures, in the ecosystems, when the disciplines try to define their own isolated, endemic rules, principles, ideas and methodologies.

We prefer, for several reasons, the term "*metepistemic*" and try to propose it instead of "*transdisciplinary*", one of the reasons being the fact that we find the "*episteme*" Greek term, that generally refers to knowledge, a richer and more seductive perspective than the Latin "*disciplina*", that evolved into the present term "discipline" and the narrow areas of specialization.

"*Metepistemic*" is a composed word, with the double Greek root "*meta*", meaning with, after, following, between, among and "*episteme*", meaning science, art, knowledge, ability, spiritual activity in general.

Like many other languages, ancient Greek used elision to avoid diaeresis, the occurrence of two vowels in adjacent syllables. The elision is the discharge of a short vowel at the end of a word and before another word that starts with a vowel, while the discharged vowel is usually replaced with an apostrophe, but in the interior elision that occures in compound words, the apostrophe disappears and this is why we proposed the form "*metepistemic*" and not "*metaepistemic*". This was the case of several compound words in ancient Greek, with the first root being "*meta*" – and we will artificially mark here with a hyphen the distinction between the two components of the word –, starting, alpabetically, with met-aggelos (messenger), met-ago (to transport), met-algeo (to regret), going further with met-ekdyo (change the clothes), met-empolao (resell) and many others, including met-empsycho and the term met-empsychosis, used in many other languages, that is not spelled metaempsychosis.

Defining architecture or any other knowledge area involves tracing its limits, a concept marked already by the peratological bath(m)ology – the study of the limit's degrees and depths – and the complex semantics starting with the Greek terms of "*peras*" and "*poros*". As the author previously wrote, "*porosity is a quality, a dimension and a characteristic of the limit and this is how disciplines are defined [...]. Through this porosity, the concepts, principles and methods of a discipline can escape and interconnect on a higher level of generality, in the area beyond the discipline limits [...].*"

6. Conclusions

Principles and methods specific to certain disciplines can freely invade the metepistemic space, the disciplinary mesotopy, through the pores of the disciplines' limits and find synaptic connections with other disciplines. Architecture, the mastery, through art and science, of the built, material limits can be the flagship, among other disciplines, of this new, metepistemic perspective.

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Biography

Adrian Vidrașcu. Is an architect, since 1990, when he graduated the “Ion Mincu” University of Architecture and Urbanism. His work was mainly centered around the concept of the limit, from a transdisciplinary, metepistemological and comparative perspective, on one hand, and on the Sustainable Architectural and Urban Development, on the other. His research work consists of basic, fundamental research studies, using methodologies and tools often connecting to other disciplines. His activity mainly unfolds in the context of the Technical Sciences Department of the “Ion Mincu” University of Architecture and Urbanism activities, with several conferences held and articles published on the topic of the peratopology and Architectural Ecotonics.